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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/516,935	12/14/2004	Roberto Lanfredi	262883US0XPCT	8635
22850 7590 08/27/2007 OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER LISTVOYB, GREGORY	
			ART UNIT 1711	PAPER NUMBER
			NOTIFICATION DATE 08/27/2007	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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## Office Action Summary

Application No.

10/516,935

Applicant(s)

LANFREDI ET AL.

Examiner

Gregory Listvoyb

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

Claims 1-7 and 8, 10-11 rejected under 35 U.S.C. 103(a) as being anticipated by Ingram et al (US 4692472) herein Ingram in combination with Iwamoto et al (US 6167892) herein Iwamoto.

Regarding claims 1, 6, 7 and 10 Ingram discloses a process for the preparation of expandable vinylaromatic polymers (i.e. styrene, Column 1, line 50) which comprising:

- a) forming an expandable bead by polymerizing in aqueous suspension of at least one vinylaromatic monomer in the presence of a suspending agent selected from inorganic salts of phosphoric acid;
- b) recovering the expandable beads bead from the reaction container;
- c) washing the beads expandable bead thus obtained with an aqueous solution
- d) recovering the washed beads expandable bead substantially without any inorganic salt of phosphoric acid, on the surface, and drying them in a stream of air (Example 1).

Ingram does not teach a step of washing the beads with aqueous solution of a non-ionic surfactant.

Iwamoto teaches a method of washing polystyrene pre-expanded particles (see Abstract and Column 6, line 15) with density of 45-46 g/l, having residual phosphate-based dispersant (see Column 2, line 20) with aqueous solution of a surface active (i.e. compound having lipophilic and hydrophilic fragments) at concentration 0.0005-0.05 % and temperature of 50-80C (Column 5, line 40-45). Among the above surfactants non-ionic compounds having aliphatic hydroxyl group (alcohol) and polyoxyethylenealkylamine are mentioned (see Column 4, lines 55-60).

Iwamoto discloses that the presents of the surfactant significantly reduces the amount of waste compare to washing the phosphate with warm or acidified water.

Therefore, it would have been obvious to a person with ordinary skills in the art to use Imamoto's washing procedure in Ingram's process in order to reduce amount of waste in a process.

Regarding claim 2, polymerization is carried out at the presence of initiator and expanding agent (column 2, line 55 and column 2, line 10).

In reference to claim 3, the initiator system comprises two peroxides: benzoyl peroxide and t-butyl perbenzoate, which are used in the Application presently examining.

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In reference to claim 4, Ingram discloses that expanding agent is pentane, which has a boiling point within the range of 10-100C (Example 1).

In reference to newly presented Claim 11, Ingram discloses a monochlorostyrene as a monomer (Column 1, line 50).

Claims 1-10 and 14 (newly presented) rejected under 35 U.S.C. 103(a) as being unpatentable over Gluck (US 6414041) herein Gluck in combination with Iwamoto.

Gluck discloses a following process:

- a) forming an expandable bead by polymerizing in aqueous suspension of at least one vinylaromatic monomer in the presence of a suspending agent selected from inorganic salts of phosphoric acid;
- b) recovering the expandable beads bead from the reaction container;
- c) washing the beads expandable bead thus obtained with an aqueous solution
- d) recovering the washed beads expandable bead substantially without any inorganic salt of phosphoric acid, on the surface, and drying them in a stream of air (see Example 1).

Gluck teaches an expandable styrene polymer with density from 5 to 80 g/ml (column 2, line 45) with graphite content from 0.1 to 25%wt.

Gluck discloses that such polystyrene can be used in heat insulating articles.

Gluck does not disclose washing procedure with non-ionic surfactant.

Iwamoto teaches a method of washing polystyrene pre-expanded particles (see Abstract and Column 6, line 15) with density of 45-46 g/l, having residual phosphate-based dispersant (see Column 2, line 20) with aqueous solution of a surface active (i.e. compound having lipophilic and hydrophilic fragments) at concentration 0.0005-0.05 % and temperature of 50-80C (Column 5, line 40-45). Among the above surfactants non-ionic compounds having aliphatic hydroxyl group (alcohol) and polyoxyethylenealkylamine are mentioned (see Column 4, lines 55-60).

Iwamoto discloses that the presents of the surfactant significantly reduces the amount of waste compare to washing the phosphate with warm or acidified water.

Therefore, it would have been obvious to a person with ordinary skills in the art to use Imamoto's washing procedure in Gluck's process in order to reduce amount of waste in a process.

Claims 1, 12 (newly presented) and 13 (newly presented) rejected under 35 U.S.C. 103(a) as being unpatentable over Oohara et al (US 6221926) herein Oohara in combination with Iwamoto.

Oohara discloses a following process:

- a) forming an expandable bead by polymerizing in aqueous suspension of at least one vinylaromatic monomer in the presence of a suspending agent selected from inorganic salts of phosphoric acid;
- b) recovering the expandable beads bead from the reaction container;
- c) drying them in a stream of air (see Example 1).

Regarding Claims 12 and 13, Oohara discloses that his polystyrene particles have a molecular weight of 150000-600000 (Column 4, line 10).

Oohara does not disclose an washing procedure with non-ionic surfactant.

Washing procedure is necessary, since it reduced an amount of unwanted materials on the surface of the beads. The presence of such materials may have an adverse effect on the final articles (i.e. bad insulation properties, leakage, etc.)

Iwamoto teaches a method of washing polystyrene pre-expanded particles (see Abstract and Column 6, line 15) with density of 45-46 g/l, having residual phosphate-based dispersant (see Column 2, line 20) with aqueous solution of a surface active (i.e. compound having lipophilic and hydrophilic fragments) at concentration 0.0005-0.05 % and temperature of 50-80C (Column 5, line 40-45). Among the above surfactants non-

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ionic compounds having aliphatic hydroxyl group (alcohol) and polyoxyethylenealkylamine are mentioned (see Column 4, lines 55-60).

Imamoto discloses that the presents of the surfactant significantly reduces the amount of waste compare to washing the phosphate with warm or acidified water.

Therefore, it would have been obvious to a person with ordinary skills in the art to use Imamoto's washing procedure in Oohara's process in order to eliminate adverse effect on the final articles reduce amount of waste in a process.

### ***Response to Arguments***

Applicant's arguments, see Applicant's Remarks, filed 6/04/2007, with respect to Claims 1-10 have been fully considered and are persuasive. The Rejection of Claims 1-10 has been withdrawn.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory Listvoyb whose telephone number is (571) 272-6105. The examiner can normally be reached on 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.




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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Gregory Listvoyb  
Examiner  
Art Unit 1711

GL  
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